FIG. 1

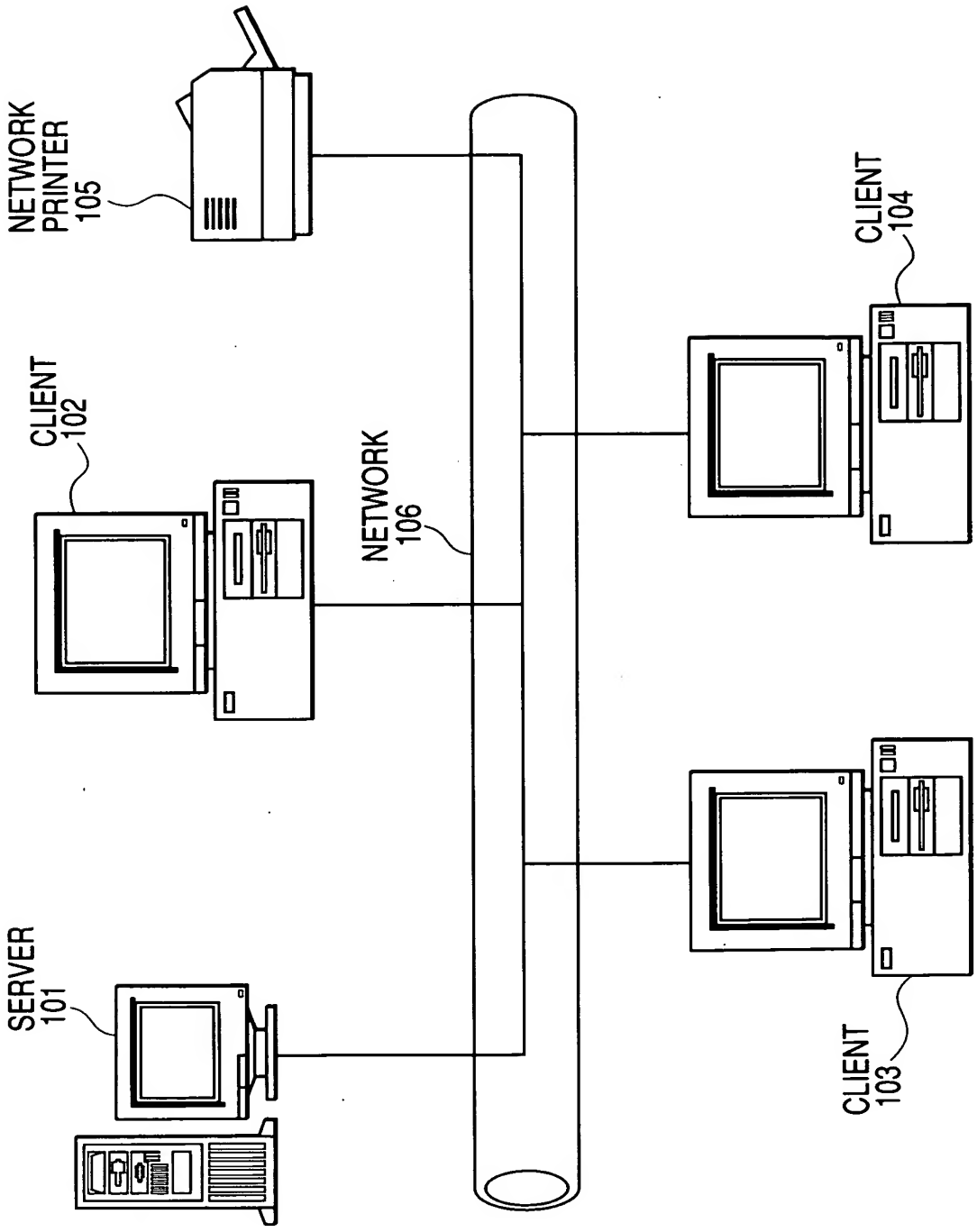

NETWORK PRINTER 105
CLIENT 102
NETWORK 106
CLIENT 104
SERVER 101
CLIENT 103

FIG. 2

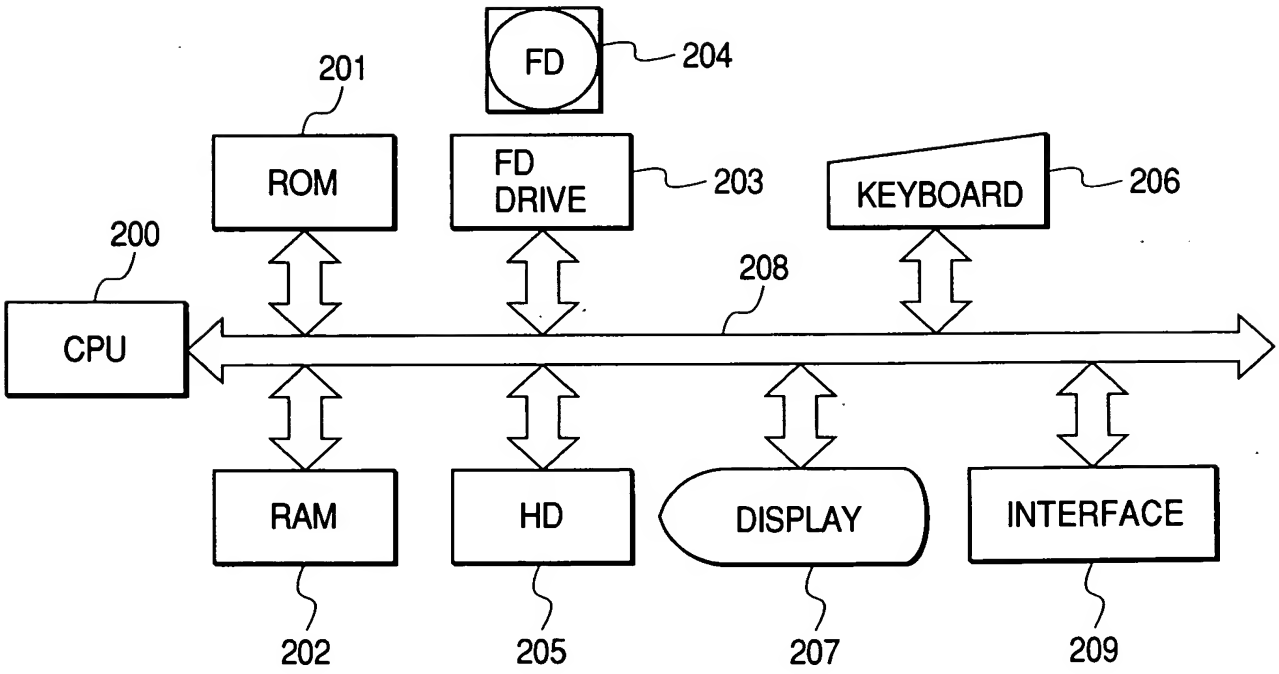

FD
204
201
ROM
FD
DRIVE
203
KEYBOARD
206
200
208
CPU
RAM
HD
DISPLAY
INTERFACE
202
205
207
209

FIG. 3

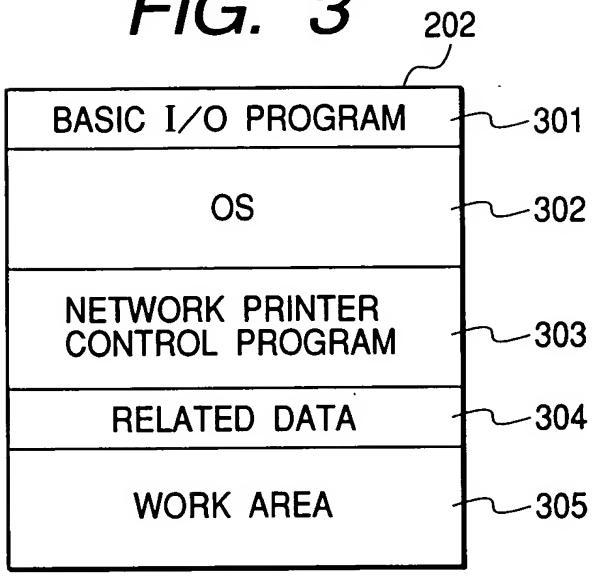

202
BASIC I/O PROGRAM
301
OS
302
NETWORK PRINTER CONTROL PROGRAM
303
RELATED DATA
304
WORK AREA
305

FIG. 4

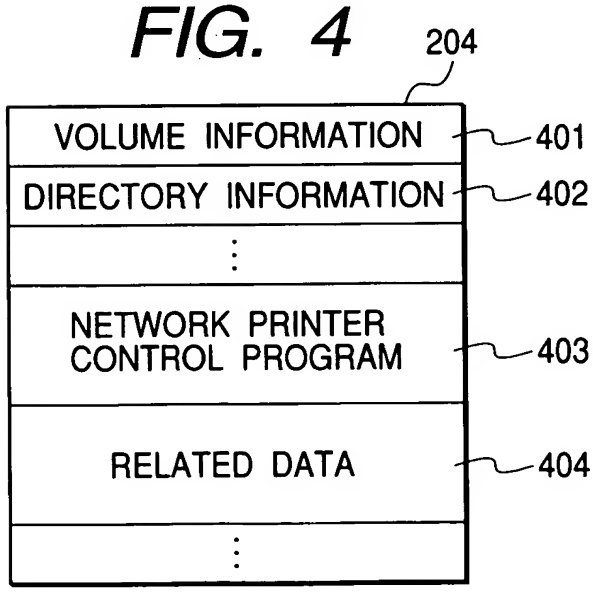

204
VOLUME INFORMATION
401
DIRECTORY INFORMATION
402
NETWORK PRINTER CONTROL PROGRAM
403
RELATED DATA
404

FIG. 5

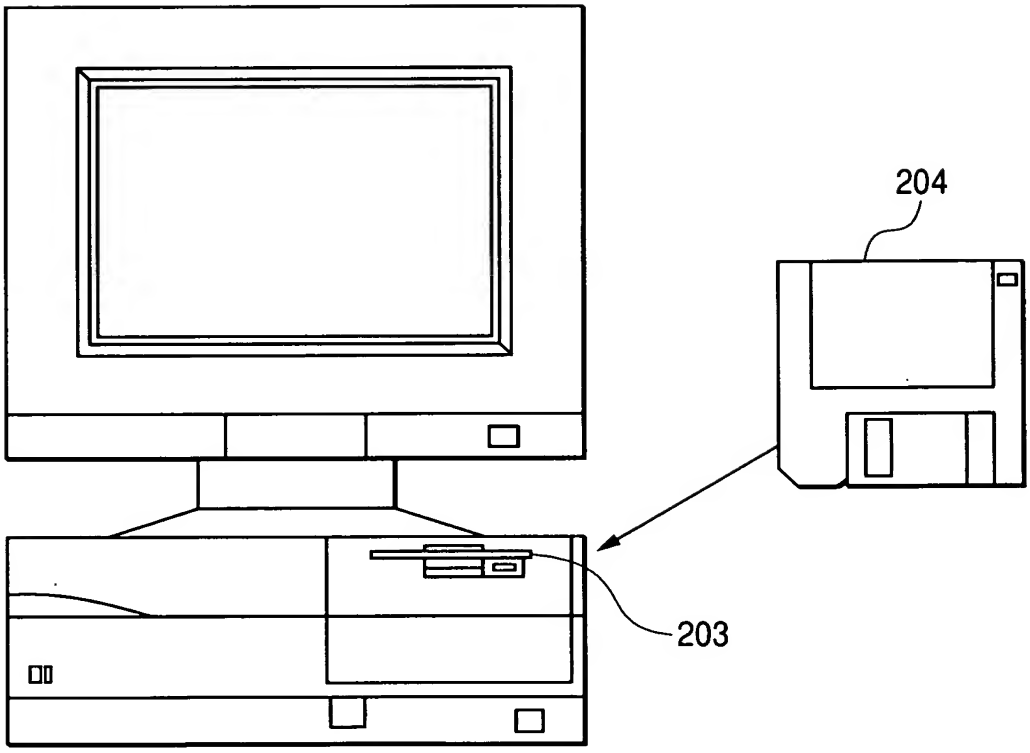


FIG. 6

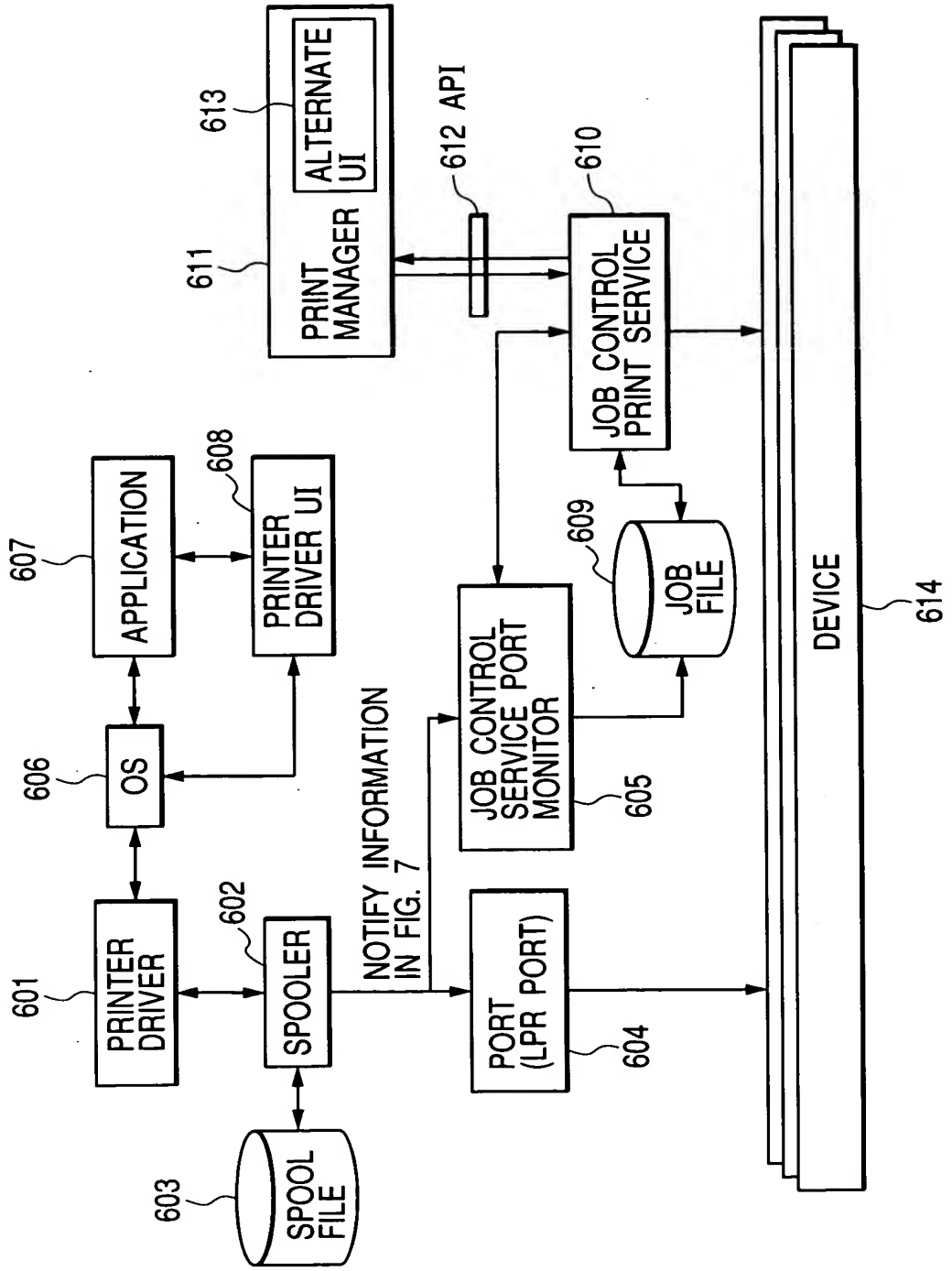

PRINTER DRIVER
601
SPOOLER
602
SPOOL FILE
603
PORT (LPR PORT)
604
JOB CONTROL SERVICE PORT MONITOR
605
OS
606
APPLICATION
607
PRINTER DRIVER UI
608
JOB FILE
609
JOB CONTROL PRINT SERVICE
610
PRINT MANAGER
611
612 API
ALTERNATE UI
613
DEVICE
614
NOTIFY INFORMATION IN FIG. 7

FIG. 7

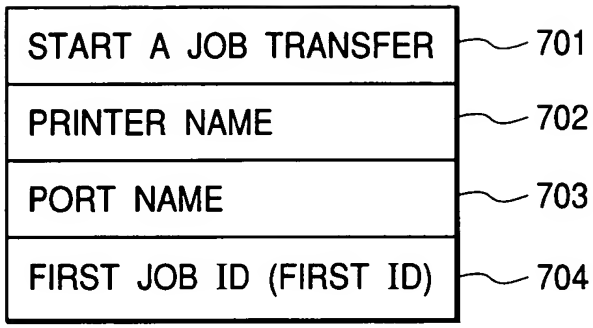

START A JOB TRANSFER
701
PRINTER NAME
702
PORT NAME
703
FIRST JOB ID (FIRST ID)
704

FIG. 8

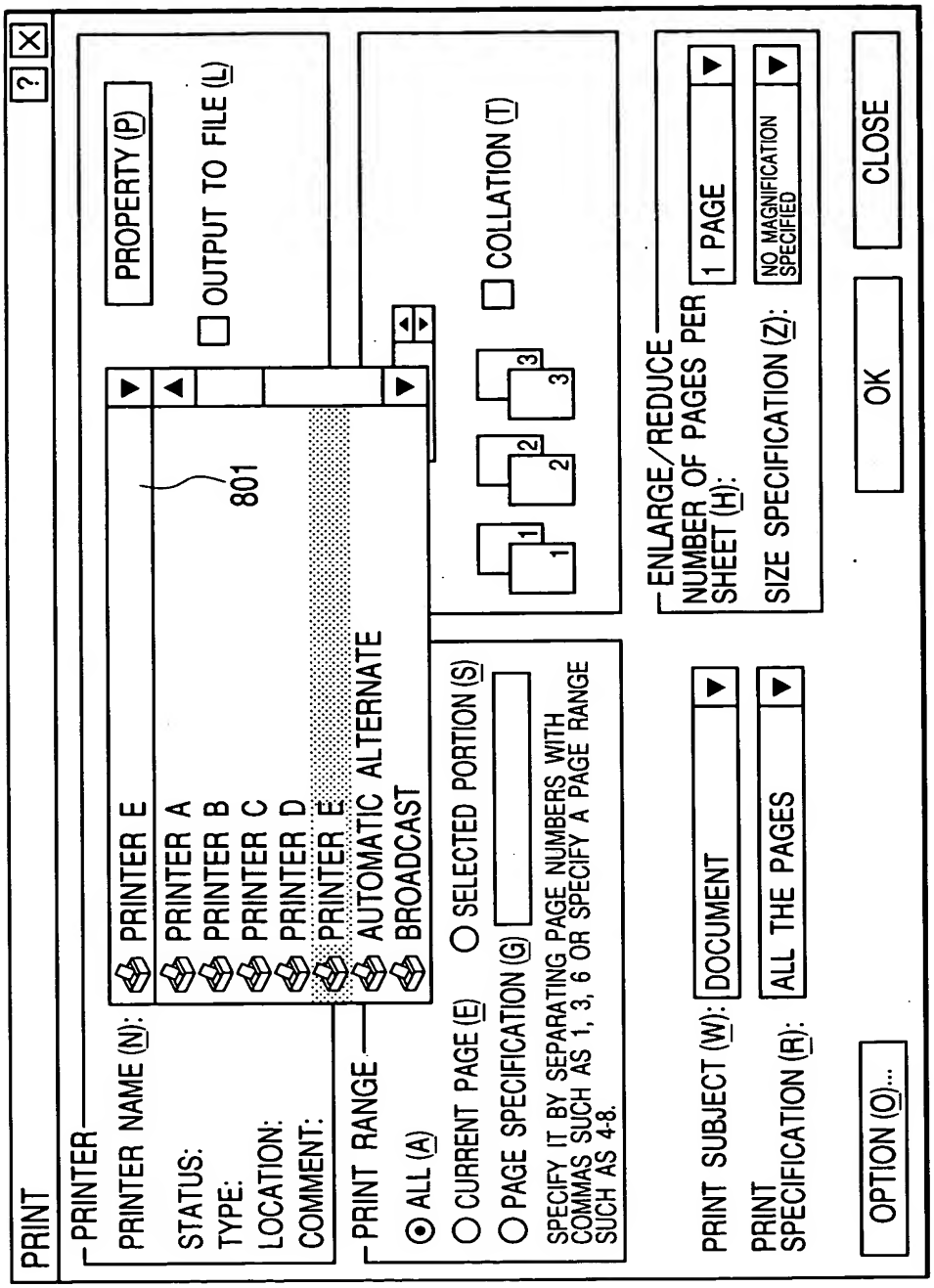

PRINT
PRINTER
PRINTER NAME (N):
PRINTER E
PROPERTY (P)
PRINTER A
PRINTER B
PRINTER C
PRINTER D
PRINTER E
801
OUTPUT TO FILE (L)
STATUS:
TYPE:
LOCATION:
COMMENT:
PRINT RANGE
AUTOMATIC ALTERNATE
BROADCAST
ALL (A)
CURRENT PAGE (E)
SELECTED PORTION (S)
PAGE SPECIFICATION (G)
SPECIFY IT BY SEPARATING PAGE NUMBERS WITH COMMAS SUCH AS 1, 3, 6 OR SPECIFY A PAGE RANGE SUCH AS 4-8.
COLLATION (T)
ENLARGE/REDUCE
NUMBER OF PAGES PER SHEET (H):
1 PAGE
SIZE SPECIFICATION (Z):
NO MAGNIFICATION SPECIFIED
PRINT SUBJECT (W):
DOCUMENT
PRINT SPECIFICATION (R):
ALL THE PAGES
OPTION (O)...
OK
CLOSE

FIG. 9

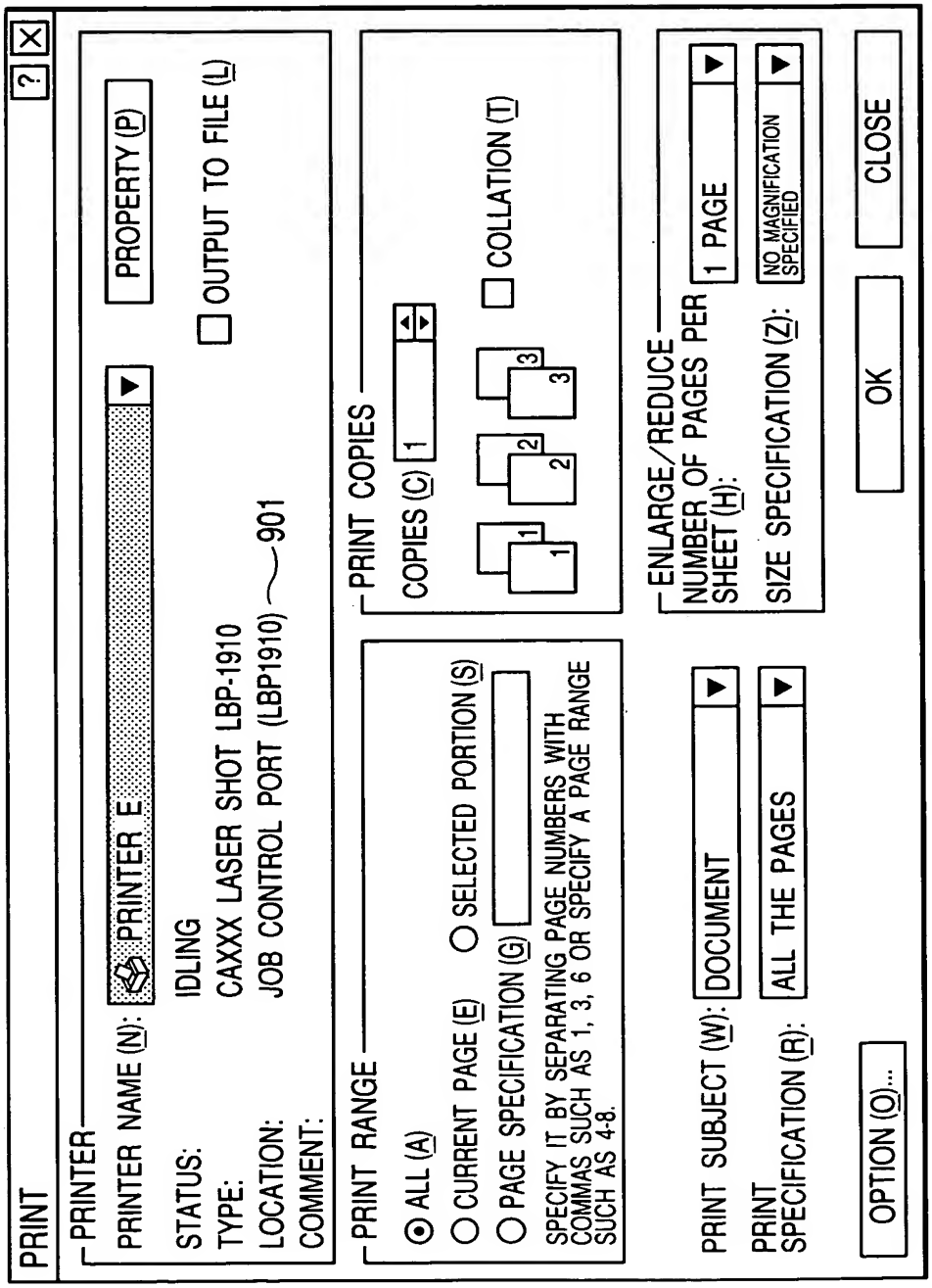

PRINT
PRINTER
PRINTER NAME (N):
PRINTER E
PROPERTY (P)
STATUS:
IDLING
TYPE:
CAXXX LASER SHOT LBP-1910
OUTPUT TO FILE (L)
LOCATION:
JOB CONTROL PORT (LBP1910)
901
COMMENT:
PRINT RANGE
ALL (A)
CURRENT PAGE (E)
SELECTED PORTION (S)
PAGE SPECIFICATION (G)
SPECIFY IT BY SEPARATING PAGE NUMBERS WITH COMMAS SUCH AS 1, 3, 6 OR SPECIFY A PAGE RANGE SUCH AS 4-8.
PRINT COPIES
COPIES (C)
1
COLLATION (T)
ENLARGE/REDUCE
NUMBER OF PAGES PER SHEET (H):
1 PAGE
SIZE SPECIFICATION (Z):
NO MAGNIFICATION SPECIFIED
PRINT SUBJECT (W):
DOCUMENT
PRINT SPECIFICATION (R):
ALL THE PAGES
OPTION (O)...
OK
CLOSE

FIG. 10

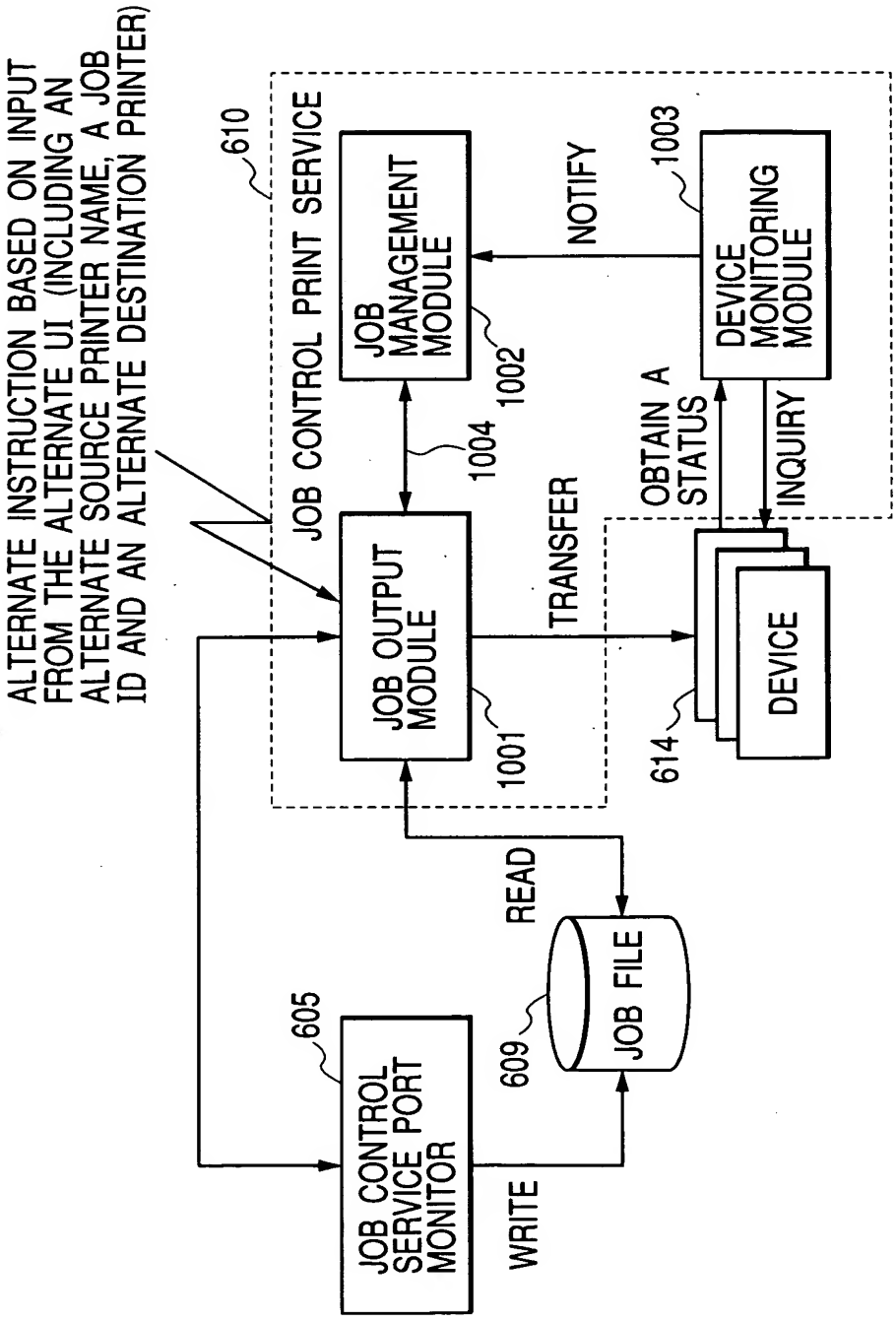

ALTERNATE INSTRUCTION BASED ON INPUT FROM THE ALTERNATE UI (INCLUDING AN ALTERNATE SOURCE PRINTER NAME, A JOB ID AND AN ALTERNATE DESTINATION PRINTER)
610
JOB CONTROL PRINT SERVICE
JOB MANAGEMENT MODULE
1002
NOTIFY
1003
DEVICE MONITORING MODULE
1004
OBTAIN A STATUS
INQUIRY
JOB OUTPUT MODULE
1001
TRANSFER
614
DEVICE
READ
605
JOB CONTROL SERVICE PORT MONITOR
609
JOB FILE
WRITE

FIG. 11

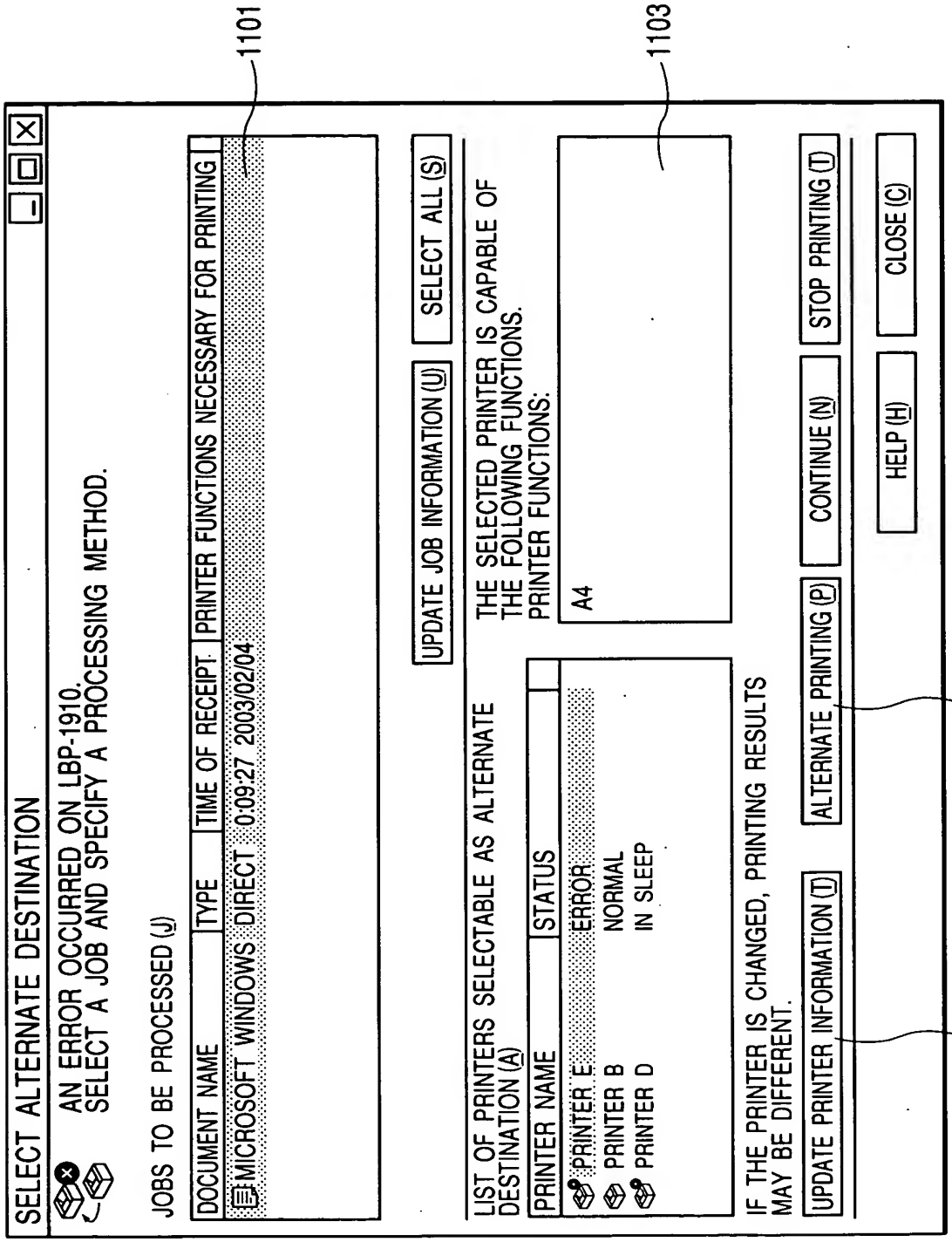

SELECT ALTERNATE DESTINATION
AN ERROR OCCURRED ON LBP-1910.
SELECT A JOB AND SPECIFY A PROCESSING METHOD.
JOBS TO BE PROCESSED (J)
DOCUMENT NAME
TYPE
TIME OF RECEIPT
PRINTER FUNCTIONS NECESSARY FOR PRINTING
MICROSOFT WINDOWS
DIRECT
0:09:27 2003/02/04
1101
UPDATE JOB INFORMATION (U)
SELECT ALL (S)
LIST OF PRINTERS SELECTABLE AS ALTERNATE DESTINATION (A)
PRINTER NAME
STATUS
PRINTER E
ERROR
PRINTER B
NORMAL
PRINTER D
IN SLEEP
THE SELECTED PRINTER IS CAPABLE OF THE FOLLOWING FUNCTIONS.
PRINTER FUNCTIONS:
A4
1103
IF THE PRINTER IS CHANGED, PRINTING RESULTS MAY BE DIFFERENT.
UPDATE PRINTER INFORMATION (I)
ALTERNATE PRINTING (P)
CONTINUE (N)
STOP PRINTING (T)
HELP (H)
CLOSE (C)
1102
1104

FIG. 12

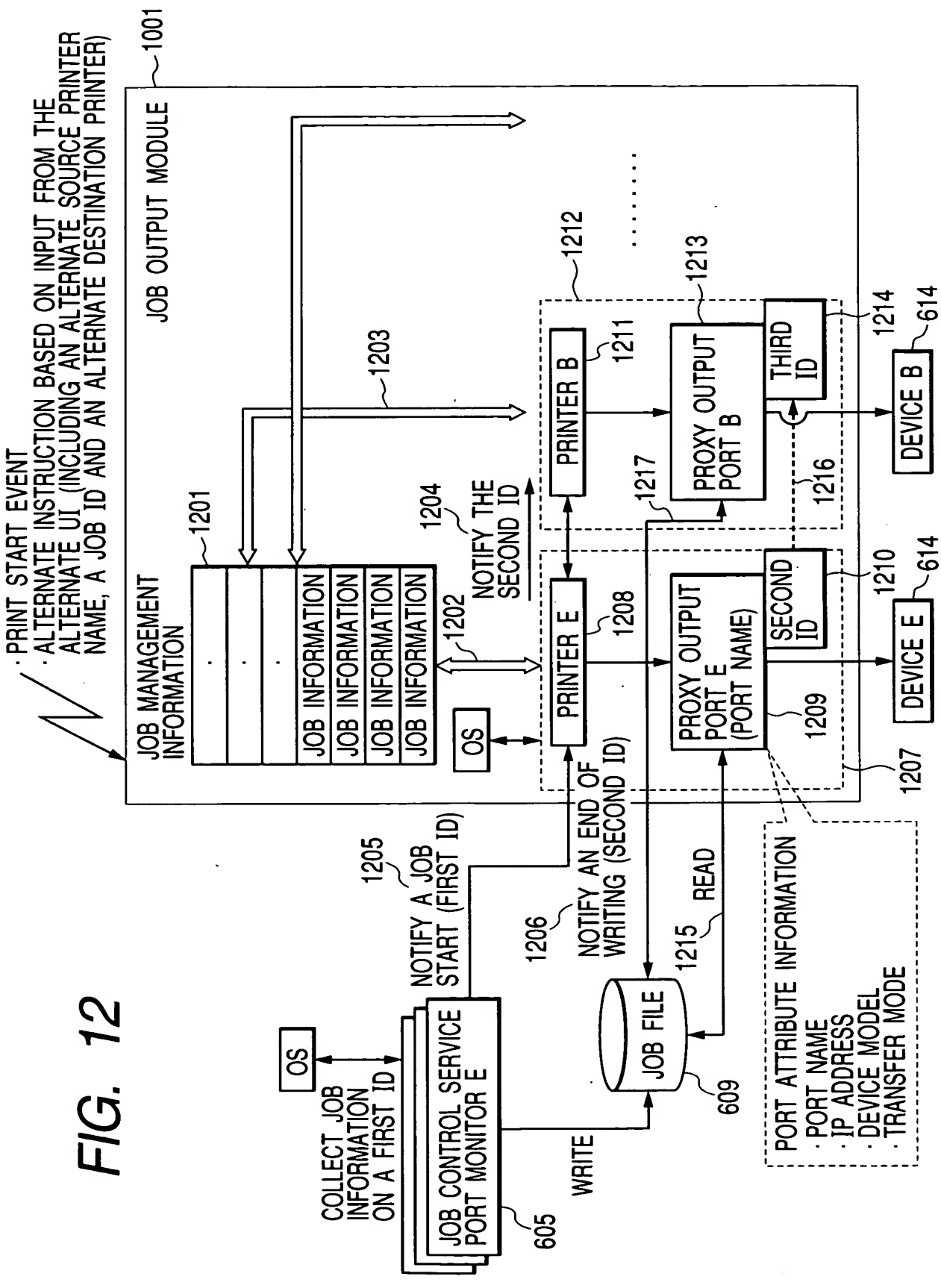

· PRINT START EVENT
· ALTERNATE INSTRUCTION BASED ON INPUT FROM THE ALTERNATE UI (INCLUDING AN ALTERNATE SOURCE PRINTER NAME, A JOB ID AND AN ALTERNATE DESTINATION PRINTER)
1001
JOB OUTPUT MODULE
JOB MANAGEMENT INFORMATION
1201
JOB INFORMATION
JOB INFORMATION
JOB INFORMATION
JOB INFORMATION
1203
1204
NOTIFY THE SECOND ID
1202
OS
PRINTER E
1208
PRINTER B
1211
1212
1213
PROXY OUTPUT PORT E (PORT NAME)
PROXY OUTPUT PORT B
SECOND ID
THIRD ID
1210
1214
1216
1217
1209
DEVICE E
DEVICE B
614
614
1207
PORT ATTRIBUTE INFORMATION
· PORT NAME
· IP ADDRESS
· DEVICE MODEL
· TRANSFER MODE
1205
NOTIFY A JOB START (FIRST ID)
1206
NOTIFY AN END OF WRITING (SECOND ID)
1215
READ
JOB FILE
609
OS
COLLECT JOB INFORMATION ON A FIRST ID
JOB CONTROL SERVICE PORT MONITOR E
605
WRITE

FIG. 13A

1301	JOB IDENTIFIER	SECOND ID
1302	ORIGINAL JOB IDENTIFIER	SECOND ID
1303	OS JOB IDENTIFIER	FIRST ID
1304	FILE NAME	JOB FILE 609
1305	PRINTER NAME	PRINTER E
1306	PORT NAME	PROXY OUTPUT PORT E
1307	STATUS	SPOOLING-DELETING
1308	TIME OF RECEIPT	X:X:X
1309	PRIORITY	1

FIG. 13B

1310	JOB IDENTIFIER	THIRD ID
1311	ORIGINAL JOB IDENTIFIER	SECOND ID
1312	OS JOB IDENTIFIER	FIRST ID
1313	FILE NAME	JOB FILE 609
1314	PRINTER NAME	PRINTER B
1315	PORT NAME	PROXY OUTPUT PORT B
1316	STATUS	TO BE TRANSMITTED
1317	TIME OF RECEIPT	X:X:X
1318	PRIORITY	1

FIG. 14

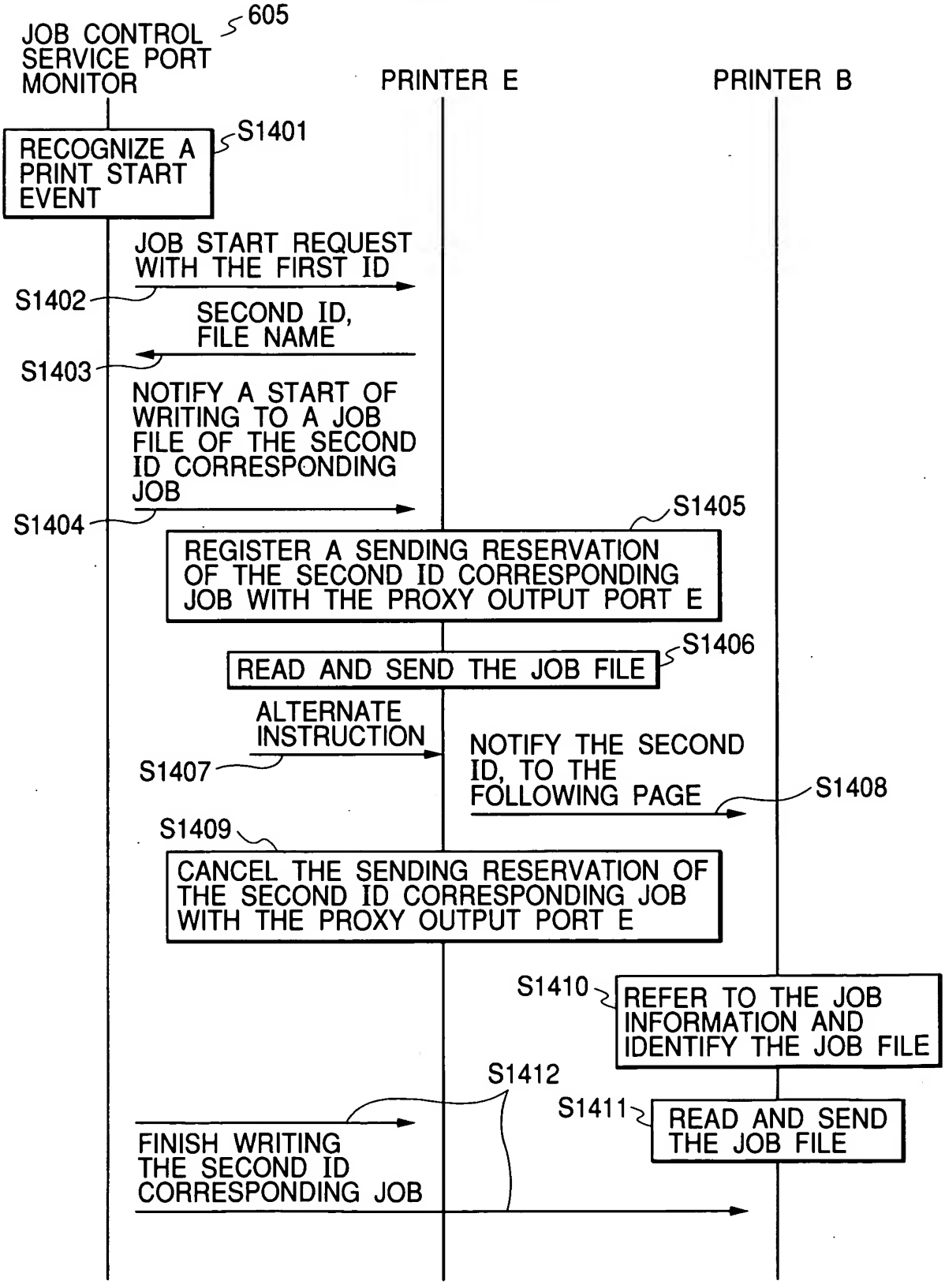

JOB CONTROL SERVICE PORT MONITOR
605
PRINTER E
PRINTER B
RECOGNIZE A PRINT START EVENT
S1401
JOB START REQUEST WITH THE FIRST ID
S1402
SECOND ID, FILE NAME
S1403
NOTIFY A START OF WRITING TO A JOB FILE OF THE SECOND ID CORRESPONDING JOB
S1404
S1405
REGISTER A SENDING RESERVATION OF THE SECOND ID CORRESPONDING JOB WITH THE PROXY OUTPUT PORT E
S1406
READ AND SEND THE JOB FILE
ALTERNATE INSTRUCTION
S1407
NOTIFY THE SECOND ID, TO THE FOLLOWING PAGE
S1408
S1409
CANCEL THE SENDING RESERVATION OF THE SECOND ID CORRESPONDING JOB WITH THE PROXY OUTPUT PORT E
S1410
REFER TO THE JOB INFORMATION AND IDENTIFY THE JOB FILE
S1412
S1411
READ AND SEND THE JOB FILE
FINISH WRITING THE SECOND ID CORRESPONDING JOB

FIG. 15

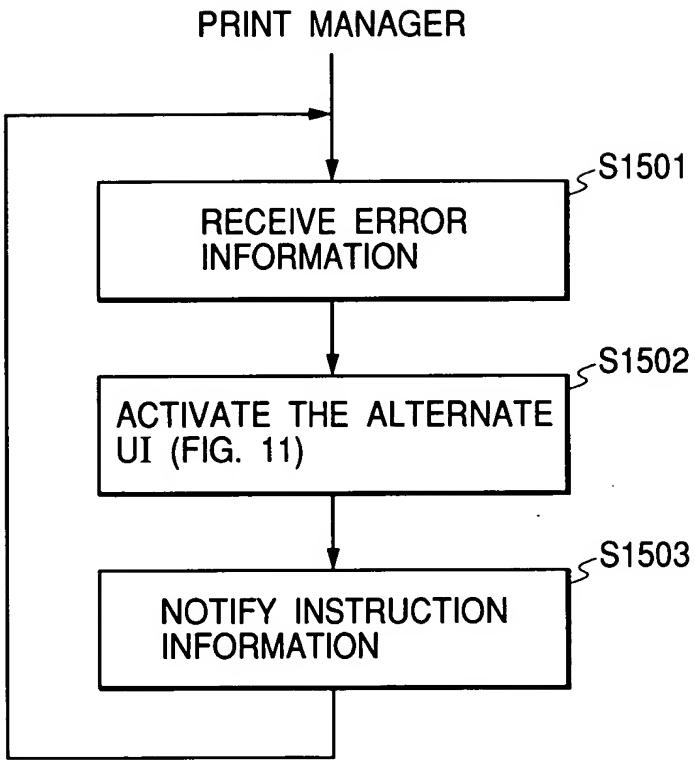

PRINT MANAGER
S1501
RECEIVE ERROR INFORMATION
S1502
ACTIVATE THE ALTERNATE UI (FIG. 11)
S1503
NOTIFY INSTRUCTION INFORMATION

FIG. 16

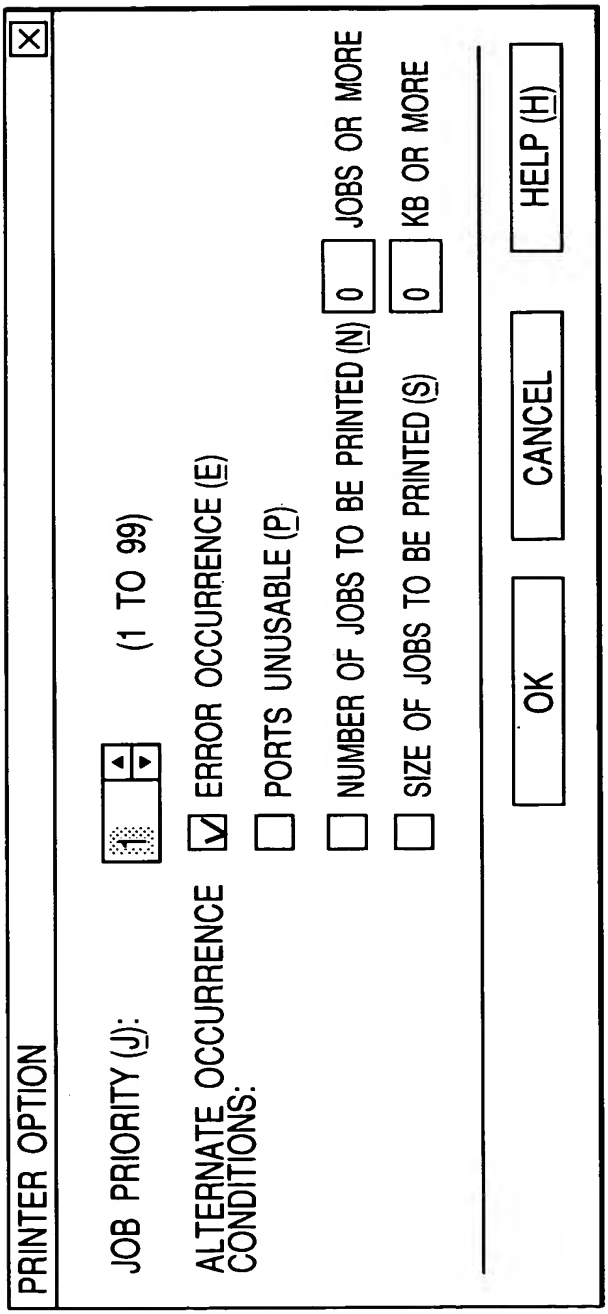

PRINTER OPTION
JOB PRIORITY (J):
1
(1 TO 99)
ALTERNATE OCCURRENCE CONDITIONS:
ERROR OCCURRENCE (E)
PORTS UNUSABLE (P)
NUMBER OF JOBS TO BE PRINTED (N)
0
JOBS OR MORE
SIZE OF JOBS TO BE PRINTED (S)
0
KB OR MORE
OK
CANCEL
HELP (H)

FIG. 17

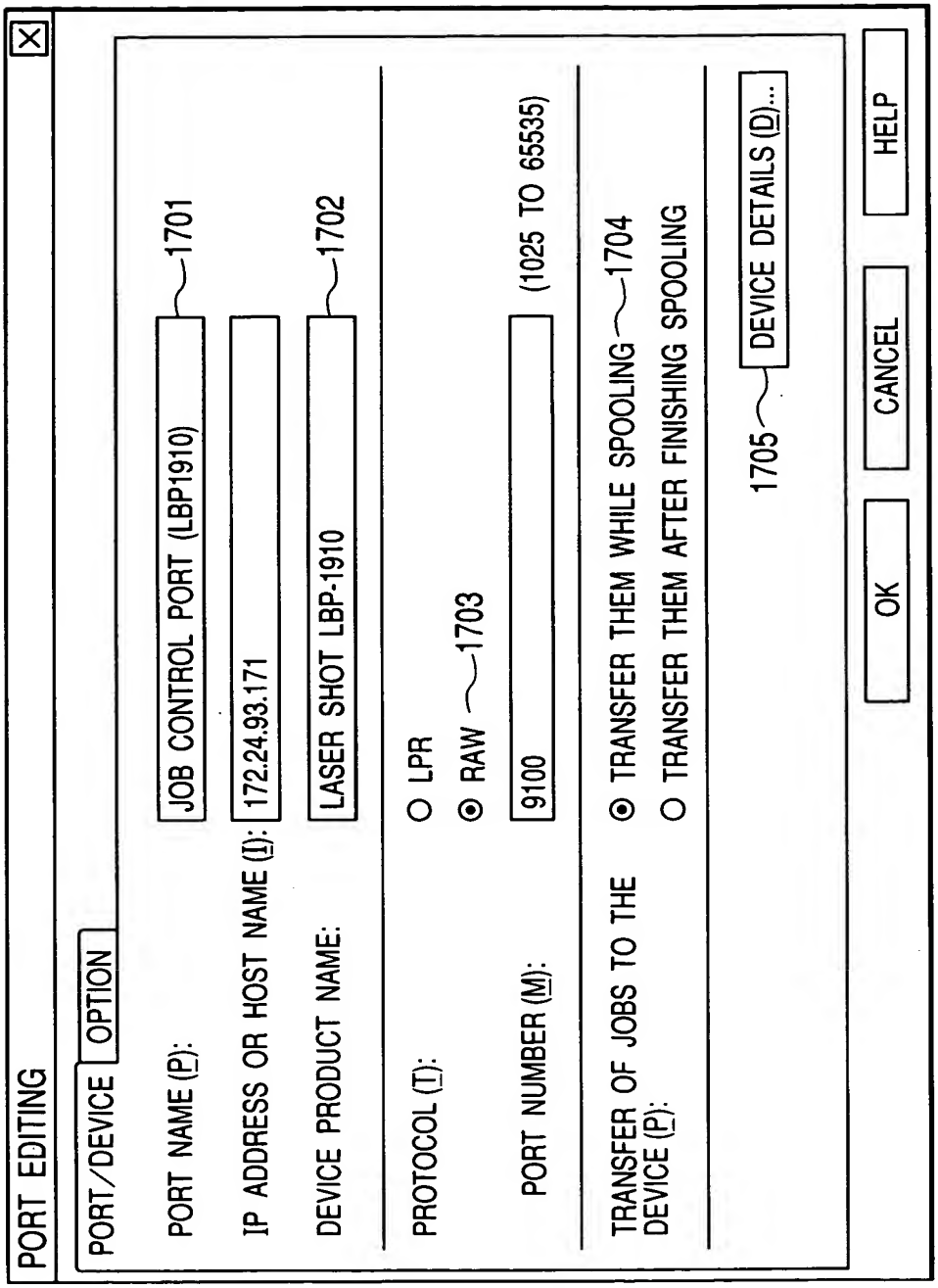
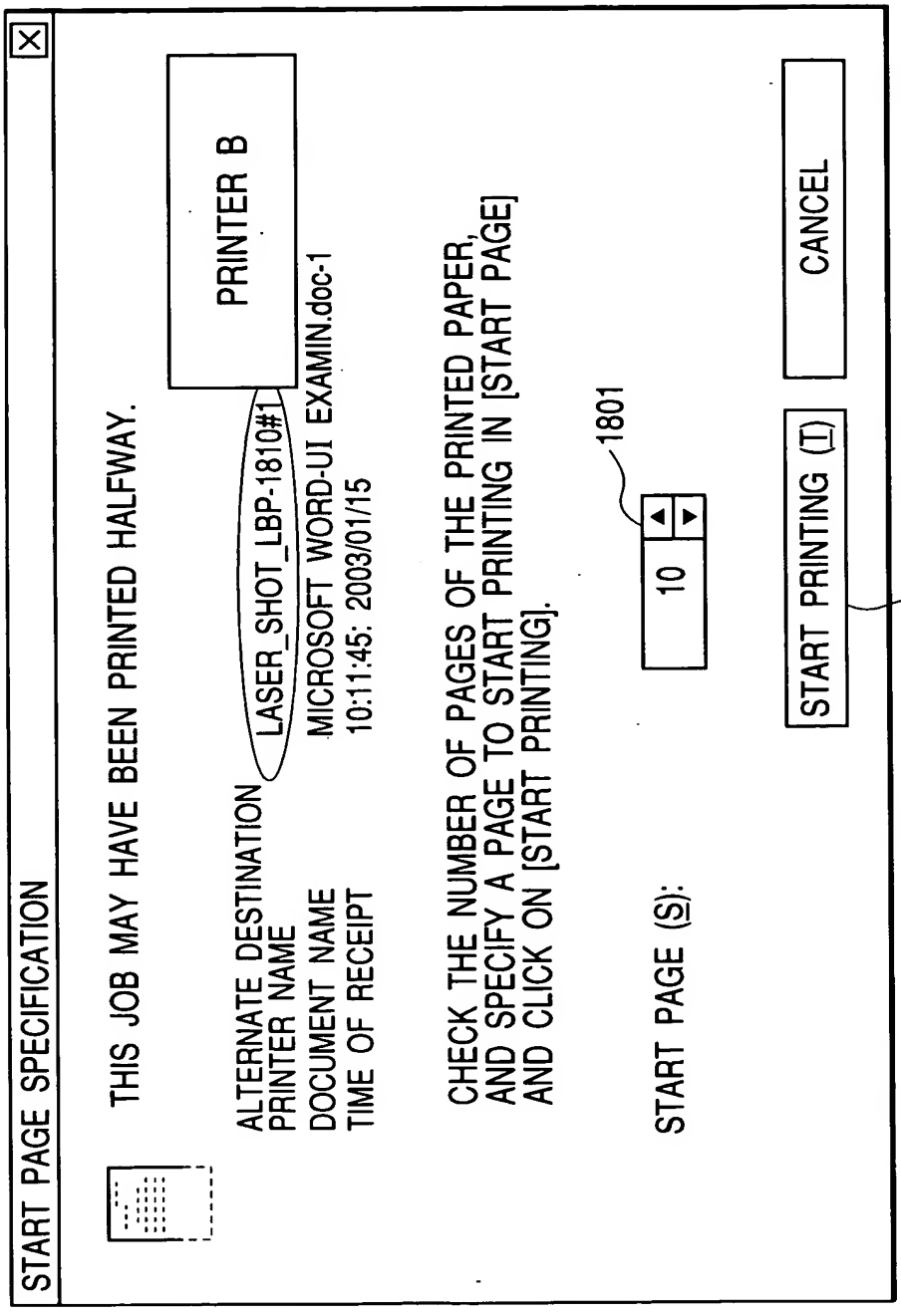

PORT EDITING
PORT/DEVICE
OPTION
PORT NAME (P):
JOB CONTROL PORT (LBP1910)
1701
IP ADDRESS OR HOST NAME (I):
172.24.93.171
DEVICE PRODUCT NAME:
LASER SHOT LBP-1910
1702
PROTOCOL (T):
LPR
RAW
1703
PORT NUMBER (M):
9100
(1025 TO 65535)
TRANSFER OF JOBS TO THE DEVICE (P):
TRANSFER THEM WHILE SPOOLING
1704
TRANSFER THEM AFTER FINISHING SPOOLING
1705
DEVICE DETAILS (D)...
OK
CANCEL
HELP

FIG. 18


START PAGE SPECIFICATION
THIS JOB MAY HAVE BEEN PRINTED HALFWAY.
ALTERNATE DESTINATION
PRINTER NAME
LASER_SHOT_LBP-1810#1
PRINTER B
DOCUMENT NAME
MICROSOFT WORD-UI EXAMIN.doc-1
TIME OF RECEIPT
10:11:45: 2003/01/15
CHECK THE NUMBER OF PAGES OF THE PRINTED PAPER,
AND SPECIFY A PAGE TO START PRINTING IN [START PAGE]
AND CLICK ON [START PRINTING].
START PAGE (S):
10
1801
START PRINTING (T)
CANCEL
1802